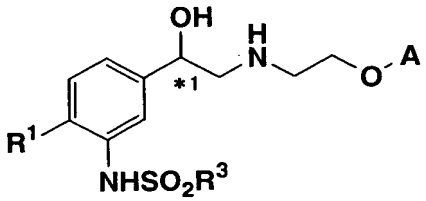
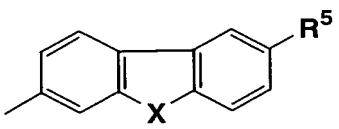
WHAT IS CLAIMED IS:

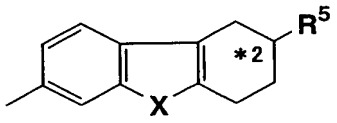
1. A process for the preparation of a compound of the formula (1):



(1)

wherein R^1 represents a hydrogen or halogen atom, or a hydroxyl group, R^3 represents a lower alkyl group or a benzyl group, *1 represents an asymmetric carbon atom, and A represents one of the following groups:

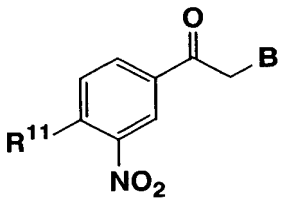




wherein X represents NH, O or S, R^5 represents a hydrogen atom, or a hydroxyl, amino or acetylamino group, *2 represents an asymmetric carbon atom when R^5 is not a hydrogen atom,

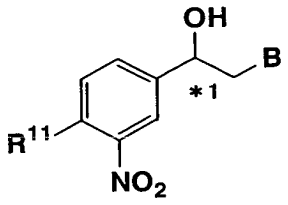
said process comprising:

reducing a compound of the formula (7):



(7)

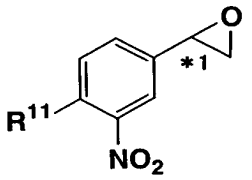
wherein R^{11} represents a hydrogen or halogen atom, or a protected hydroxyl group, B represents a chlorine or bromine atom, to give a halohydrin of the formula (6):



(6)

wherein R^{11}, B and *1 are as defined above; and,

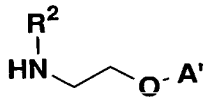
converting the halohydrin under alkaline conditions into an epoxy compound of the formula (5):



(5)

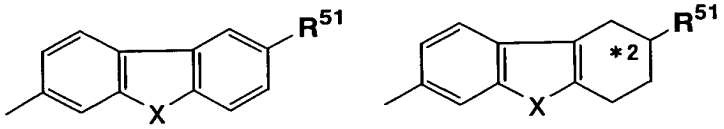
wherein R^{11} and *1 are as defined above; and,

reacting the epoxy compound with a compound of the formula (9):

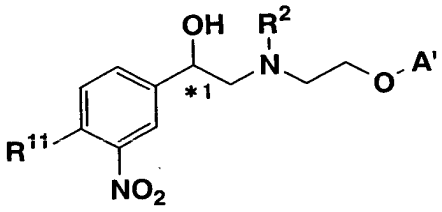


(9)

wherein R^2 represents an amino-protecting group, and A' represents one of the following groups:



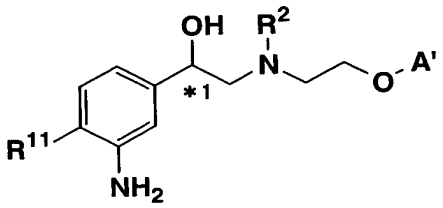
wherein X represents NH, O or S, R^{51} represents a hydrogen atom, a protected hydroxyl group, a protected amino group or an acetylamino group, and *2 represents an asymmetric carbon atom when R^{51} is not a hydrogen atom, to give an amino alcohol of the formula (4):



(4)

wherein R^{11}, R^2, A' and *1 are as defined above; and,

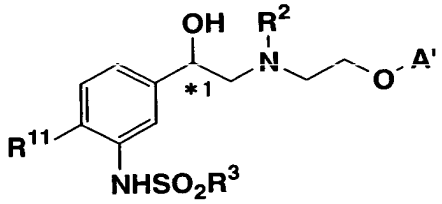
reducing the nitro group to give an aniline derivative of the formula (3):



(3)

wherein R^{11}, R^2, A' and *1 are as defined above; and,

reacting the aniline derivative with a sulfonating agent to give an amino alcohol of the formula (2):

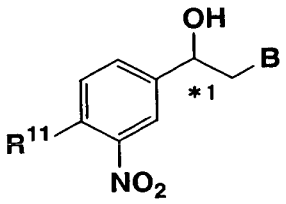


(2)

wherein R^3, R^{11}, R^2, A' and *1 are as defined above; and then,

simultaneously or sequentially removing the protecting groups to give the compound of the formula (1).

2. A process for the preparation of either one of optical isomers of a halohydrin of the formula (6):

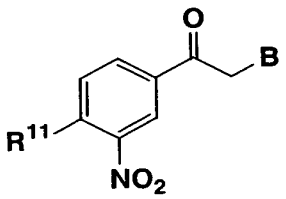


(6)

wherein R^{11} represents a hydrogen or halogen atom, or a protected hydroxyl group, and B represents a chlorine or bromine atom, and *1 represents an asymmetric carbon atom,

said process comprising:

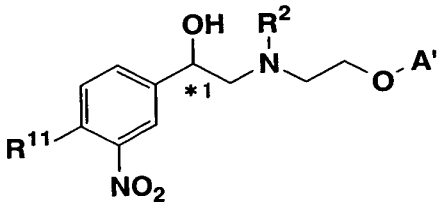
asymmetrically reducing a compound of the formula (7):



(7)

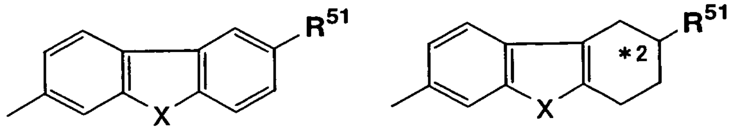
wherein R^{11} and B are as defined above, to give the compound of the formula (6).

3. A process for the preparation of a compound of the formula (4):



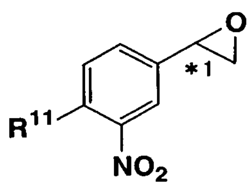
(4)

wherein R^{11} represents a hydrogen or halogen atom, or a protected hydroxyl group, R^2 represents an amino-protecting group, *1 represents an asymmetric carbon atom, and A' represents one of the following groups:



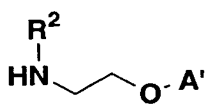
wherein X represents NH, O or S, R^{51} represents a hydrogen atom, a protected hydroxyl group, a protected amino group or an acetylamino group, and *2 represents an asymmetric carbon atom when R^{51} is not a hydrogen atom, said process comprising:

reacting an epoxy compound of the formula (5):



(5)

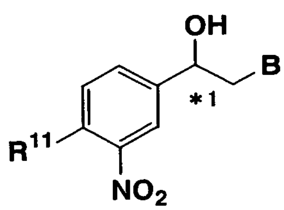
wherein R^{11} and *1 are as defined above, with a compound of the formula (9):



(9)

wherein R^2 and A' are as defined above, to give the compound of the formula (4).

4. An optical isomer of a compound of the formula (6):

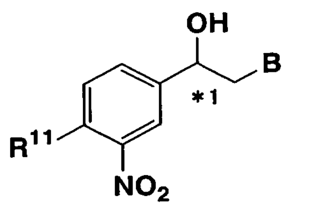


(6)

wherein R^{11} represents a halogen atom, B represents a chlorine or bromine atom,

and *1 represents an asymmetric carbon atom.

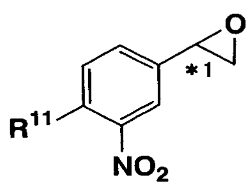
5. An optical isomer of a compound of the formula (6):



(6)

wherein R^{11} represents a hydrogen atom or a protected hydroxyl group, B represents a chlorine atom, and *1 represents an asymmetric carbon atom.

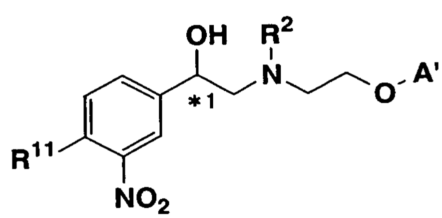
6. An optical isomer of a compound of the formula (5):



(5)

wherein R^{11} represents a halogen atom, and *1 represents an asymmetric carbon atom.

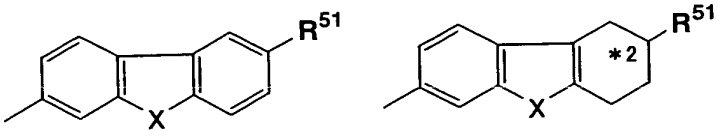
7. A compound of the formula (4):



(4)

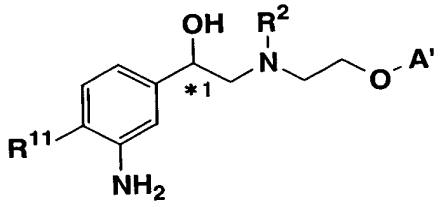
wherein R^{11} represents a hydrogen or halogen atom, or a protected hydroxyl group, R^2 represents an amino-protecting group, *1 represents an asymmetric

carbon atom, and A' represents one of the following groups:



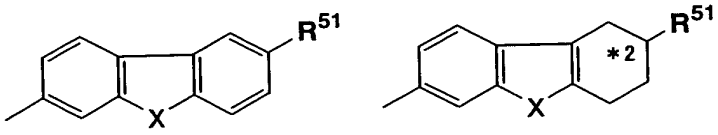
wherein X represents NH, O or S, R^{51} represents a hydrogen atom, a protected hydroxyl group, a protected amino group or an acetylamino group, and *2 represents an asymmetric carbon atom when R^{51} is not a hydrogen atom, or a salt thereof.

8. A compound of the formula (3):



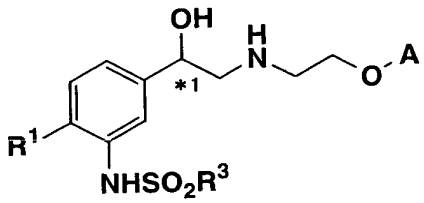
(3)

wherein R^{11} represents a hydrogen or halogen atom, or a protected hydroxyl group, R^2 represents an amino-protecting group, *1 represents an asymmetric carbon atom, and A' represents one of the following groups:



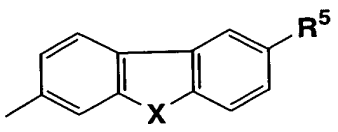
wherein X represents NH, O or S, R^{51} represents a hydrogen atom, a protected hydroxyl group, a protected amino group or an acetylamino group, and *2 represents an asymmetric carbon atom when R^{51} is not a hydrogen atom, or a salt thereof.

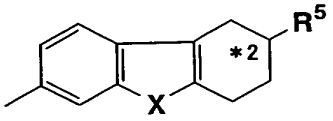
9. A process for the preparation of a compound of the formula (1):



(1)

wherein R^1 represents a hydrogen or halogen atom, R^3 represents a lower alkyl group or a benzyl group, *1 represents an asymmetric carbon atom, and A represents one of the following groups:

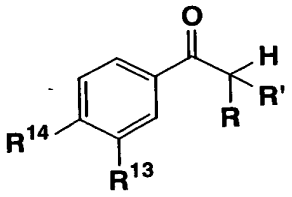




wherein X represents NH, O or S, R^5 represents a hydrogen atom, or a hydroxyl, amino or acetylamino group, and *2 represents an asymmetric carbon atom when R^5 is not a hydrogen atom,

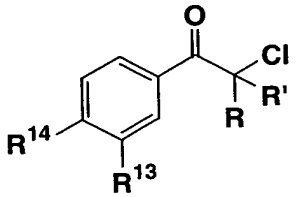
said process comprising:

chlorinating a compound of the formula (18):



(18)

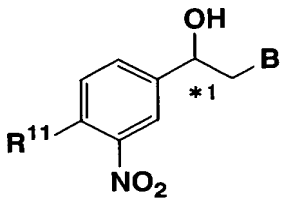
wherein R^{14} represents a hydrogen or halogen atom, R^{13} represents nitro, and both R and R' represent a hydrogen atom, with sulfuryl chloride in an ether solvent, to give a compound of the formula (19):



(19)

wherein R^{13}, R^{14}, R and R' are as defined above; and,

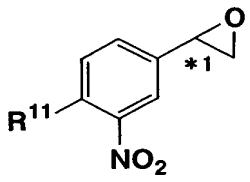
reducing the chlorinated compound to give a halohydrin of the formula (6):



(6)

wherein R^{11} represents a hydrogen atom or halogen atom, B represents a chlorine atom, and *1 is as defined above; and,

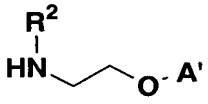
converting the halohydrin under alkaline conditions into an epoxy compound of the formula (5):



(5)

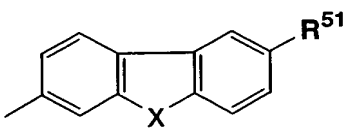
wherein R^{11} and *1 are as defined above; and,

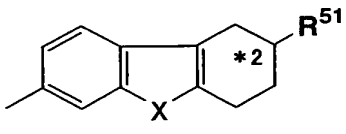
reacting the epoxy compound with a compound of the formula (9):



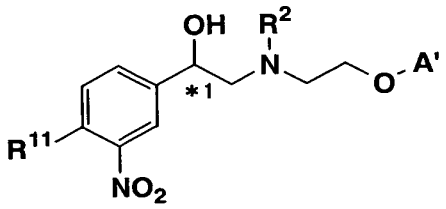
(9)

wherein R^2 represents an amino-protecting group, and A' represents one of the following groups:





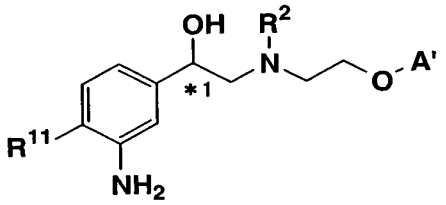
wherein X represents NH, O or S, R^{51} represents a hydrogen atom, a protected hydroxyl group, a protected amino group or an acetylamino group, and *2 represents an asymmetric carbon atom when R^{51} is not a hydrogen atom, to give an amino alcohol of the formula (4):



(4)

wherein R^{11}, R^2, A' and *1 are as defined above; and,

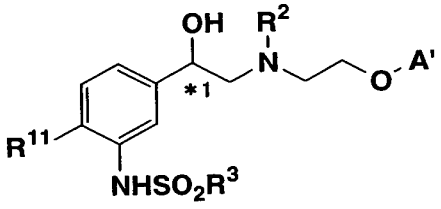
reducing the nitro group to give an aniline derivative of the formula (3):



(3)

wherein R^{11}, R^2, A' and *1 are as defined above; and,

reacting the aniline derivative with a sulfonating agent to give an amino alcohol of the formula (2):

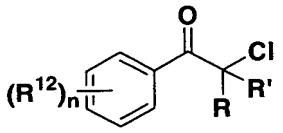


(2)

wherein R^3, R^{11}, R^2, A' and *1 are as defined above; and then,

simultaneously or sequentially removing the protecting groups to give the compound of the formula (1).

10. A process for the preparation of an α-chloroacetophenone derivative of the formula (17):

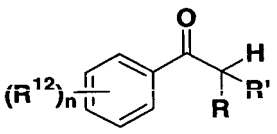


(17)

wherein n represents 1 to 5, R^{12} represents a hydrogen or halogen atom, or acyloxy, acylamino, $NR^6SO_2R^3$, cyano, trifluoromethyl or nitro, and when n is 2 or more, R^{12} represents same or different substituents as defined above, and R and R' may be same or different from each other and represent a hydrogen atom, a lower alkyl group or an aryl group, and wherein R^6 represents a hydrogen atom or an amino-protecting group, and R^3 represents a lower alkyl group or a benzyl group,

said process comprising:

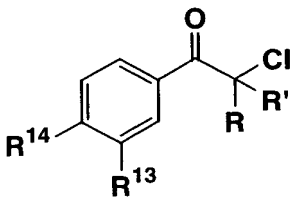
chlorinating a compound of the formula (16):



(16)

wherein n, R^{12}, R and R' are as defined above, with sulfuryl chloride in an ether solvent to give the compound of the formula (17).

11. A process for the preparation of an α-chloroacetophenone derivative of the formula (19):

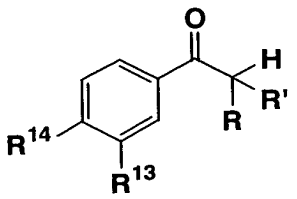


(19)

wherein R^{14} represents a hydrogen or halogen atom, R^{13} represents nitro, and both R and R' represent a hydrogen atom,

said process comprising:

chlorinating a compound of the formula (18):



(18)

wherein R^{13}, R^{14}, R and R' are as defined above, with sulfuryl chloride in an ether solvent to give the compound of the formula (19).

12. The process of claim 10 or 11, wherein the ether solvent used is diisopropyl ether or methyl t-butyl ether.

add A1
add A2